

REMARKS

The present application includes claims 23-26, 30-43, 50, 51, 53-77 and 80-91. Claims 23, 24, 32, 34, 50, 51, 57, 77, 79, 81, 82, 83 and 84 are currently amended. Claims 45-49, 52 and 79 are currently deleted. Claims 87-91 are new.

Rejections under 35 U.S.C. §112, ¶2

Independent claim 23 and dependents- Claims 23 and 81 have been amended to overcome all of the rejections under §112, ¶2. Applicant submits that the amendments are purely cosmetic and do not reduce the scope of the claims. Claim 79 has been cancelled, making the rejection moot.

Independent claim 32 and dependents- Claim 32 has been amended to overcome all of the rejections under §112, ¶2. Applicant submits that the amendments are purely cosmetic and do not reduce the scope of the claims.

Independent claim 45 and dependents- Claim 45 has been cancelled.

Independent claim 77 has been amended to overcome all of the rejections under §112, ¶2. Applicant submits that the amendments are purely cosmetic and do not reduce the scope of the claims.

Independent claim 82 has been amended to overcome all of the rejections under §112, ¶2. Applicant submits that the amendments are purely cosmetic and do not reduce the scope of the claims.

Independent claim 83 has been amended to overcome all of the rejections under §112, ¶2. Applicant submits that the amendments are purely cosmetic and do not reduce the scope of the claims. Claim 84 has not been amended substantively, but only has been put into positive form, a purely cosmetic change. The Examiner states that claim 84 could mean that the database includes no information. Applicant disagrees. Claim 84 is dependent on claim 82. If the combination of claims 82 and 84 is considered, this reading of claim 84 is not possible.

Response to Arguments

As to the Examiner's response to arguments with respect to claim 32, applicant believes that the Examiner has misunderstood both the claim language and applicant's previous arguments. The claim language does indeed say that only a subset of the hydraulic and electrical information is in the database. However, the claim is completely silent as to the completeness of

other design information and not as the Examiner indicates in the paragraph bridging pages 5 and 6 of the current office action.

Applicant believes that the other issues discussed in the response to arguments are moot in view of the amendments made in response to the rejections under §112, ¶2.

Rejections under 35 U.S.C. §103(a)

Claims 23-26, 30-43, 50, 51, 53-77 and 79-86 stand rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent 6,295,513 to Thackston in view of US Patent 4,937,786. The Examiner appears to have taken the position that Thackston teaches all of the elements claimed, and that Carver (which is directed to a vehicle design system) makes it obvious to apply the system of Thackston to a vehicle. Applicant submits that Thackston does not teach all of the elements of the claimed invention other than the application to a vehicle, at least as amended. Thus, the combination does not teach them either. Thackston does not provide a *prima facie* case of unpatentability. Applicant notes that independent claims 72 and 86 have not been amended and for these claims at least, the Examiner has not presented a *prima facie* case of unpatentability. Applicant will concentrate on the reasons that the *independent* claims are not *prima facie* unpatentable in view of Thackston..

Looking first at the rejection of claim 23, the Examiner on page 17 (first full paragraph) identifies the virtual scratch pad of Thackston with the database formed by gathering the information and then identifies the index of Thackston with the index claimed in the next paragraph of the claim. Applicants submit that there is no index formed of the scratch pad information and that even if there was, this index is not made available to workers outside the group that is using the scratch pad. The index of Thackston that is indicated by the Examiner is an index of the entire system. This is in contrast to the method of claim 23 in which the index is of the gathered information and this index is made available to all the workers on the vehicle.

Similarly, in claim 32, the claimed database, containing only a subset of electrical and hydraulic information is open to all design workers. There is no such database in Thackston in which the only database is a full database and any scratch pad is not available to the general group of workers.

Claim 50 has been amended. Claim 50 now requires

generating worker codes for at least some parts of the system that indicate worker responsibility for design of that part; and
associating each of the worker codes with one or more workers responsible for said design.

As amended claim 50 clearly distinguishes over the cited prior art. While the prior art does allow for restricting access to the data for certain individuals, it does not indicate which individuals are responsible for the design of the part. This allows for the responsible workers to be easily identified so that, for example, automatic notification of the responsible worker is easily achieved when the need arises because of changes in another part that interacts in some way with the part for which the worker in charge is known. It also allows for the easy generation of tables of responsibility from the database. Furthermore, the split between a worker code associated with the part and an association of responsible workers with the worker code makes it easy to change responsibility without changing the parts database. Claim 51, as amended, allows for a given worker to be responsible for more than one part. This allows for even greater flexibility in changing responsible workers easily.

Claim 72 appears to be rejected based on MPEP §2144 (II) A, that omission of an element and its function is obvious if the function of the element is not desired. Applicant submits that this idea has been misapplied and that the Examiner has not provided the rationale required by this section of the MPEP, by the cases cited in the MPEP section and by other cases. In order not to break the flow of the response, as section on the case law is included as an appendix

As will be seen from the case law cited in the appendix, the most important part of the statement quoted by the Examiner is the last part, namely "if the function of the element is not desired." The case law (including that quoted in MPEP §2144 (II)) requires that the normal tests of obviousness be applied to the question of *whether* it would have been obvious to omit the function. The Examiner has not made this analysis.

Applicant submits that this is not the case here, since the entire concept of the system of Thackston depends on having information on all of the parts available to each of the designers. Thackston is based on the premise, on which all prior art systems are based, that in order to allow each of the subsystems to be designed properly, information on all or substantially all of the parts had to be available to all the designers. It would not have been obvious, based on Thackston, to remove almost all the elements from the database. The invention of claim 72 is based on the non-obvious understanding by the applicant that it was not necessary to have all of this information in the database in order to provide the necessary functionality, but that reducing the scope of the common database not only did not reduce the functionality of the design process, but actually enhanced it.

Thus, applicant submits that the present "omission" of elements acts more in the manner of MPEP §2144 (II) B, namely:

B. *Omission of an Element with Retention of the Element's Function Is an Indicia of Unobviousness*

Applicant submits that the function of the design systems of both Thackston and the present invention is to allow design workers of a given system access to the elements of the vehicle outside their own system that they may need to know about in order to be able to design their own system properly. If the Examiner's analysis is correct that elements have been left out of Thackston's system to meet the requirements of the present claim 72, then since the present claimed system allows the designers to perform their design, the elements have been omitted while retaining the function. This is a true indicia of patentability.

In a very real sense, omission of these elements to the extent that only 10% or 1% of the total elements is found in the database, provides a new database, one which is more portable and easier to use in many ways. This new database not only does not reduce the functionality of the system but actually increases the functionality, which is a further indicia of patentability.

Applicant submits that the reduction in the scope of the universally available database is a patentable feature since it does not reduce the functionality of the design system, and actually enhances it. Alternatively, applicant submits that the new databases is so different from the database of Thackston that it can not be considered a mere modification of it.

Claim 77 has been amended to change "at least some" to "any". As amended the claim clearly excludes any database or scratch pad of Thackston, which includes sufficient information utilized by a tool to perform at least one design to design at least one design task.

Claim 82 differs from is said to be obvious over Thackston for the same reason as claim 72, namely that the removal of an element and its function renders the claim obvious. Applicants submit that this rejection is not correct with respect to claim 82 for the same reason that it is not correct with respect to claim 72. Furthermore, applicants submit

Claim 86 is limited in substantially the same way as claim 72 with respect to the contents of the database and is patentable for the same reasons as given above for claim 72.

New claim 87 is patentable over Thackston since it contains the following combination of elements, namely:

- (b) providing a database containing information regarding fewer than all the parts needed for using any of the design tools and having information regarding parts used for a plurality of said design tools;
- (c) providing access to the database to authorized users of more than one design tool;

Thackston contains a central database that contains all the parts used for at least some of the design tools and which is available to designers of more than one design tool. It also teaches use of a "scratch pad" for use by workers to design a given part which may include parts from other design tools and necessarily includes all parts needed for the design tool being worked on. This scratch pad would be open only to the designers using the design tool.

There is no reason why Thackston would want to or need to provide a database system according to the method of claim 87.

Case Law appendix on removing an element and its function

The MPEP section cited by the Examiner mentions three cases. These are *Ex parte Wu*; *In re Larson* and *In re Kuhle*. However, before discussing these three cases, applicant wishes to bring the following cases, which are believed to be more on point to the Examiner's attention. These are: *In re Wright* 145 USPQ 182 (CCPA 1965); *In re Karlson*, 136 USPQ 184 (CCPA 1963); and *In re Ochiai*, (CAFC 1995) 37 USPQ2d 1127. After discussing these cases, applicant will show that the cases cited in the MPEP section that quotes them do not stand for the premise that appears to be at the foundation of the rejection.

In re Wright, states in headnote 4:

4. Patentability--Adding or subtracting parts (§ 51.05)

Finding that elimination of specific element and its function would be an obvious expedient is based upon a determination of obviousness under 35 U.S.C. 103, not upon a mechanical rule, which court is asked to extract from *In re Karlson*, 136 USPQ 184, about omission of element and its function from known combination being obvious if remaining elements perform same function as before; language to this effect in *Karlson* case was not intended to short-circuit wording of section 103.

In the body of the decision, the Court found further:

[4] Finally, we believe the word "solely" does not so limit claim 15 as to render it patentable. The afterburner fuel control of Chandler is governed by two parameters, pressure differential across the compressor and tail pipe temperature. We agree with the solicitor that "the elimination of the temperature parameter for the afterburner fuel control of Chandler * * * together with its tailpipe safeguarding function, would be an obvious expedient," but we hasten to add that this finding is based upon a *determination of obviousness under section 103* and not upon a mechanical rule, which the solicitor would have us extract from *In re Karlson*, 50 CCPA 908, 311 F.2d 581, 136 USPQ 184, about the omission of an element and its function from a known combination being obvious if the remaining elements perform the same function as before. Language to this effect in *Karlson* was never intended to short-circuit the clear wording of 35 U.S.C. 103. The same reasoning applies to the word "solely" in describing the regulating of fuel flow to the main combustion chamber.

The headnote of *In re Karlson* was apparently considered to provide a *per se* rule. However, not only is such a rule not supported by the discussion, it is, as has been indicated above explained away by the board in *In Re Wright*. *In Re Karlson* states in headnote 1:

1. Patentability--Adding or subtracting parts (§ 51.05)

Omission of element and its function in combination is obvious expedient if remaining elements perform same functions as before.

And in the body of the decision:

On the other hand, we agree with the finding below that it would be obvious to one having ordinary skill in the art to remove the screen and tube in the Shuldener tank to provide "a clear and unobstructed interior space" as in the claims here presented.

Appellant contends that the board's holding that it would not be unobvious to eliminate the screen and filler tube of Shuldener ignores the inventive concept of Shuldener. It is asserted that such modification would change the function of Shuldener's feeder tank in that he would not be able to obtain a concentrated solution in the lower half of the tank and an unconcentrated solution in the upper half of the tank.

Appellant's contention that the inventive concept of Shuldener requires the

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maintenance of a supply of chemical near the center of the tank to permit the incoming turbulent flow of water to aid in dissolving of the chemical, is negated by the plain indication of Shuldener that the chemical is charged into the tank only after the shunt flow of water through the tank has been shut off by closing the appropriate valve, thus eliminating the flow of water through the tank while the chemical is dissolving.

[1] It is, of course, apparent that the elimination of the Shuldener screen and filler tube eliminates the functions of those elements. It is well settled, however, that omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before. *In re Nelson*, 40 CCPA 708, 198 F.2d 637, 95 USPQ 82; *In re Eliot*, 22 CCPA 1088, 76 F.2d 309, 25 USPQ 111.

We believe the record clearly supports the conclusion of the board that no change in the functions of the remaining elements would result from the omission of the screen and filler tubes.

We find no logical support for appellant's argument that to remove the screen and filler tube would destroy the structure relied on by Shuldener to execute his invention since Shuldener considered it necessary to have a means for providing the concentrated and unconcentrated solutions in his tank. The Shuldener patent discloses that the screen "will intercept any chemical that has not dissolved by the time it reaches the screen and this may occur when the chemical is poured in fast." This indicates that much, if not all, of the chemical would dissolve before reaching the screen. Shuldener indicates that the filler tube is a "preferred" element which "may be" provided to confine the solid chemical as it passes through the upper portion of the tank. The screen and tube would seem to be indicated when it would be advantageous to dissolve the chemicals in the upper portion of the tank. If it were thought desirable to dissolve the solid chemical in the lower portion of the tank, elimination of the screen and tube would seem to be suggested. The purpose of the Shuldener screen is to facilitate the dissolving of highly soluble chemicals while appellant specifies a slowly soluble reacting chemical. It would be apparent that a slowly soluble chemical might be used in Shuldener and that it would be obvious to omit the screen in such case.

It is clear that while the headnote seems to state a *per se* rule as to the deletion of an element, the analysis shows clearly that the court carried out an analysis under 35 U.S.C. §103 of whether it would have been obvious to build a device without the function. The court found that it would be obvious to do so and thus that the deletion of the structure was also obvious.

In re Ochiai is a later case whose headnote reinforces the proposition stated in *In Re Wright* and which provides a broad discussion of the issue of application of *per se* application of rules to obviousness enquiries. It states, in part, in its headnotes:

3. Patentability/Validity – Obviousness – In general (§ 115.0901)

No *per se* rules of obviousness have been established by precedent, and reliance on any such rules that eliminate need for fact-specific analysis of claims and prior art is legally incorrect and must cease, since use of *per se* rules in obviousness determination is inconsistent with 35 USC 103, which entitles applicant to issuance of otherwise proper patent unless Patent and Trademark Office establishes that invention, as claimed in application, is obvious over cited prior art, based on specific comparison of that prior art with claim limitations.

The text of *In re Ochiai* goes on to analyze the legal situation regarding *per se* rules and obviousness, mentioning several of the cases cited above:

The Alleged Conflict In Our Case Law

Both the Solicitor and Ochiai devote substantial portions of their briefs to purported demonstrations that our precedents on the obviousness *vel non* of chemical processes are, if not in conflict, at least in severe tension with one another and thus create unnecessary confusion. Both parties identify the same two sets of three cases as presenting the conflict: *Larsen*, *Albertson*, and *Durden*, upholding rejections on appeal, are said to be inconsistent with *Kuehl*, *Mancy*, and *Pleuddemann*, reversing rejections on appeal. While we agree that some generalized commentary found within several of these decisions may present minor tensions, both Ochiai and the Solicitor draw far too bleak a picture of the state of our case law. Other language in these cases, like their actual holdings, obviates any real inconsistency.

In *Albertson*, the court "reiterate [d] that all of the evidence must be considered on the 'subject matter as a whole,' from the viewpoint of one skilled in the art, in the determination

of obviousness, and not simply the patentability of one of the starting reactants in a process." *Albertson*, 332 F.2d at 382, 141 USPQ at 732. Thus, the Board in this case looked to the general result in *Albertson* while ignoring the *Albertson* court's explicit methodology. Every subsequent case that the parties discuss has been grounded on the same analytic principle: namely, that section 103 requires a fact-intensive comparison of the claimed process with the prior art rather than the mechanical application of one or another *per se* rule. See *Pleuddemann*, 910 F.2d at 827, 15 USPQ2d at 1741 ("We repeat that the controlling law is in Section 103 of the statute, which must be applied to the facts of this case."); *Durden*, 763 F.2d at 1411, 226 USPQ at 362 ("Our function is to apply, in each case, Section 103 as written to the facts of disputed issues, not to generalize or make rules for other cases which are unforeseeable."); *Mancy*, 499 F.2d at 1292, 182 USPQ at 305 ("[T]he statutory standard of Section 103 for determining obviousness of an invention is whether in view of the prior art the invention as a whole would have been obvious at the time it was made."); *Kuehl*, 475 F.2d at 665, 177 USPQ at 255 ("The test of unobviousness is a statutory test and

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requires comparison of the invention with the prior art in each case. . . ."). As a consequence, these cases do not -- indeed, *cannot* -- present or create conflicting legal rules. They present, instead, applications of a unitary legal regime to different claims and fields of art to yield particularized results. It is thus surprising that the Board relies on *Durden* for a general rule when the *Durden* court expressly cautioned the bar "not to generalize or make rules for other cases."

Because the regime of section 103, much like the Fourth Amendment proscriptions against "unreasonable" searches and warrants issued upon less than "probable cause," mandates that legal outcomes turn on the close analysis of facts, reasonable persons may well disagree about the outcome of a given obviousness determination. These disagreements over the application of a legal rule can, however, be transformed into perceived "irreconcilable conflicts" between legal rules only when, as occurred here, examiners, members of the Board, and patent lawyers purport to find competing *per se* rules in our precedents and argue for rejection or allowance of a particular claim accordingly. We acknowledge that some generalized commentary found in these cases reviewing rejections of claims directed to chemical processes may, if viewed in isolation, have inadvertently provided encouragement to those who desire *per se* rules in this area. For example, one case includes an extensive

discussion of the conceptual link between the obviousness *vel non* of a chemical composition and the obviousness *vel non* of a process for making the composition. 6 Such discussion, while entirely accurate, may have contributed to the erroneous view that one may determine the obviousness of a chemical process merely by determining whether it is a process for making a composition. As the cases noted above make clear, however, this is not and has never been the law of section 103. Indeed, *Durden*, the very case relied on by the

examiner and the Board for a purported *per se* rule, clearly states that there are no such *per se* rules.

[3] The use of *per se* rules, while undoubtedly less laborious than a searching comparison of the claimed invention -- including all its limitations -- with the teachings of the prior art, flouts section 103 and the fundamental case law applying it. *Per se* rules that eliminate the need for fact-specific analysis of claims and prior art may be administratively convenient for PTO examiners and the Board. Indeed, they have been sanctioned by the Board as well. But reliance on *per se* rules of obviousness is legally incorrect and must cease. Any such administrative convenience is simply inconsistent with section 103, which, according to *Graham* and its progeny, entitles an applicant to issuance of an otherwise proper patent unless the PTO establishes that the invention *as claimed* in the application is obvious over cited prior art, based on the specific comparison of that prior art with claim limitations. We once again hold today that our precedents do not establish any *per se* rules of obviousness, just as those precedents themselves expressly declined to create such rules. Any conflicts as may be perceived to exist derive from an impermissible effort to extract *per se* rules from decisions that disavow precisely such extraction.

In sum, as we clearly indicated in *In re Dillon*, a recent *in banc* decision, "[w]hen any applicant properly presents and argues suitable method claims, they should be examined in light of all . . . relevant factors, free from any presumed controlling effect of *Durden* " or any other precedent. 919 F.2d 688, 695, 16 USPQ2d 1897, 1903 (Fed. Cir. 1990) (*in banc*), cert. denied, 500 U.S. 904 (1991). Having compared Ochiai's claims, limited as they are to the use of a particular nonobvious starting material for making a particular nonobvious end product, to the prior art of record, we reverse the rejection of claims 6 through 10 as an incorrect conclusion reached by incorrect methodology. *Reversed*.

Although this case did not deal with the same *per se* rule as did *In re Karlson* cited above by applicants, *per se* rules of any kind are found to be inapplicable.

Returning to the cases cited in the MPEP:

Ex Parte Wu is substantially limited in its teaching. It states:

Appellant's claims exclude the presence of Murdock's salts of polybasic acids in the composition defined as "consisting of" the listed components. We agree with the examiner that it would have been obvious to omit Murdock's polybasic acid salts when the function attributed to these salts is not desired or required. Murdock teaches that these salts are beneficial when the composition is employed in contact with fresh water (column 3, lines 4 through 7). Omission of the salt component in preparing compositions to be used to provide corrosion resistance to metals in environments which do not encounter fresh water would have been obvious.

It is clear from this paragraph that the omission of the function itself was considered to be obvious. Thus the rejection followed from the fact that if it was obvious to delete the function, the deletion of the structure that provides the function was equally obvious.

In re Kuhle does not appear to state a rule that can be applied widely. A study of the facts of *In re Kuhle* immediately shows the difference between that case and the present one. In the cited case, the element removed was a switch which turned the device on and off. It turned out that the device turned itself off when it was removed from the soil and the functioning of the device as a whole (and not just the parts that were left) was not really changed. In *In re Kuhle* the

part that was removed did not effect the operation or functionality of the device, it was merely an unimportant feature.

In re Larson states in its headnotes:

3. Patentability--Aggregation or combination--Omission of part (§ 51.161)

If feature of reference structure is not desired, it would seem a matter of obvious choice to eliminate it and the function it serves; claim is refused.

In the body of the decision, the following analysis is present (In the paragraph bridging pages 6 and 7 of the enclosed copy of the case):

The added structure shown in the *Le Clair et al.* patent serves a particular purpose in that it increases the cargo carrying capacity. If this additional features is not desired, it would seem a matter of obvious choice to eliminate it and the function it serves. *In re Listen*, 30 CCPA 1223, 136 F.2d 719, 58 USPQ 481.

Here again the question was whether the feature would be desired or not. The Court agreed with the Examiner that it was a matter of choice as to what load was being carried and that if a lighter load was used, then the elimination of the elements needed to increase the capacity was obvious.

Applicant also notes that the section of the MPEP which refers to the three cases cited by the Examiner (MPEP §2144.04 (II) (A)) is entitled "Omission of an Element and its Function is Obvious if the Function of the Element is Not Desired." (Emphasis added.) Applicant's submit that while the section does not state clearly enough that the usual reasoning of §103 are to be followed to determine if it would be obvious to delete the function, this is the law which this section of the MPEP indicates should be followed.

Summary of case law arguments

In summary, the weight of the case law, including those cited by the MPEP, either supports or does not contradict applicants' position that determining obviousness under §103, turns on whether it would have been obvious to delete the function. No *per se* rule exists.

Conclusion

Applicant has requested a personal interview on October 16, 2007. The Examiner is respectfully requested not to take any action until this interview has taken place.

Respectfully submitted,

Paul Fenster

Paul Fenster

Reg. No. 33,877

Date: October 1, 2007

Encls:

Petition for Extension of time (two months);
Additional claim fee.